PROFILE OF ICT INNOVATIVENESS IN MALAYSIAN SMES FROM SERVICES SECTOR BASED ON CORE ICT INDICATORS

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ABSTRACT

This study is to determine the profile of Information and Communication Technology (ICT) innovativeness in Malaysian SMEs from services sector by using the core ICT indicators by businesses as suggested by International Telecommunication Union (ITU). Previous research had indicated that the rate of adoption of ICT innovation specifically among SMEs in Malaysia was low although there are many initiatives have been implemented by the government but the outcomes have not been fully translated into results. This is important to improve the business performances, to sustain and compete globally by adopting the ICT innovation as SMEs are key drivers and engine for the economic growth. More importantly, ICT are among the National Key Economic Areas (NKEAs) that need to be focus especially for the purpose of SMEs development. Core ICT indicators have been used as the measuring tools adhered to globally accepted standards. From the probability proportionate stratified random sampling, 390 respondents participated in the survey questionnaires. The results are analyzed using descriptive statistic. This study revealed the profile of ICT innovativeness for Malaysia services sector SMEs specifically based on the 12 elements of core ICT indicators. Mainly, the findings supported government agenda for developing the SMEs as stated in SME Masterplan (2011-2020) and towards achieving government's aspiration to become high income and developed nation by 2020 as stated in New Economic Model (NEM).

Index Terms— innovativeness, core ICT indicators, SME services sector, Malaysia

INTRODUCTION

The purpose of this study is to determine the performance of ICT innovativeness in Malaysia services sector SMEs by producing the profile based on the core ICT indicators for business as suggested by International Telecommunication Union (ITU). The core ICT indicators mentioned as shown in Table 1. Previous research had indicated that the rate of adoption of ICT innovation specifically among SMEs in Malaysia

was low although it is well-known that the role of ICT was among an important tool for the business to sustain and survive in the competitive world and also to move globally. The core ICT indicators are used as the measuring tools in the survey questionnaires. Mainly, this research is to support the government agenda in development of the SMEs by contributing the new theoretical implications in terms of present situation furthermore to recommend the practically implications in development programs for SMEs.

Table 1 Core Indicators on use of ICT by businesses

Code	Element
B1	The businesses using computers
B2	The persons employed routinely using computers
B3	The businesses using the Internet
B4	The persons employed routinely using the Internet
B5	The businesses with a web presence
B6	The businesses with an intranet
B7	The businesses receiving orders over the Internet
B8	The businesses placing orders over the Internet
B9	The businesses using the Internet by type of access:
	Narrowband
	Fixed broadband
	Mobile broadband
B10	The businesses with a local area network (LAN)
B11	The businesses with an extranet
B12	The businesses using the Internet by type of activity:
	Sending or receiving e-mail
	Telephoning over the Internet/VoIP
	Posting information or instant messaging
	Getting information about goods or services
	Getting information from general government organizations
	Interacting with general government organizations
	Internet banking
	Accessing other financial services
	Providing customer services
	Delivering products online
	Internal or external recruitment
	Staff training

Small and Medium Enterprises (SMEs) have play an important role and become a catalyst of economic growth in Malaysia with contribution of 99% of total business establishment in Malaysia and contribute to 31% of the nation's Gross Domestic Product (GDP) while shares 56% of total employment (SME Annual Report 2009/10). In Malaysia, SMEs can be grouped into three categories, these include micro, small and medium in the three main sectors namely agriculture, manufacturing and services sectors. The group of the SMEs is based on two characteristics, firstly, the numbers of people a business employs and secondly, the total sales or revenue generated by a business in a year. Based on the Census on Establishment and Enterprises 2005 conducted by Department of Statistics Malaysia (DOSM), SMEs in Malaysia are mainly in the services sector, accounting for 87% or 474,706 of total business establishments. Most of these businesses are involved in the distributive trade which includes wholesale and retail, as well as hotels and restaurants. The manufacturing sector, meanwhile accounts for 7% of total SMEs or a total of 39,373 businesses, of which more than half are in the three key subsectors, namely textiles and apparels, metal products and food and beverages (F&B). This is followed by the agriculture sector which constitutes another 6% of SMEs or representing 34,188 businesses involved in crop plantation, horticulture and fishing. This research focuses on the services sector SMEs which are representing the large numbers of companies in Malaysia.

As representing 99% of total business establishment in Malaysia, SMEs have been an important driver of economic growth with contribution about 31% of the nation's Gross Domestic Product (GDP), 56% from total employment and 19% exports of the country. Based on SME Annual Report 2009/10, the average annual growth rate of SMEs in the period 2006-2009 was 5.7%, above the average growth of the overall economy of 3.8% although the economic slowdown. For GDP contribution by key economic activity in 2009, services sector accounted for the majority of the share 57.6%, followed by the manufacturing sector 26.6 %, agriculture 7.7%, mining 7.7% and construction 3.3%. For the period 2006-2009, the increase in share of SME's GDP was largely contributed by the services sector and further supported by the construction and agriculture sectors. The time series data between 2000 and 2009 indicate a strong correlation between the performances of the value added growth of SMEs and the value added growth of the overall services sector in the economy. This is because of the high concentration of SMEs

in the services sector. The key growth drivers in the services sector that contributed to the growth are distributive trade, real estate and business services, and finance and insurance which mainly comprising financial intermediaries such as insurance agents, fund managers and wealth management. The increasing in the services sector performance is closely linked with consumption activities, changing consumer behavior and lifestyle of new services such as private health and wellness, private education and increase in tourism activities supported SMEs in the hotels and restaurants segment. The growth of SMEs in the services sector peaked to 12.8% in 2007 before moderating to 8.6% in 2008 and 2.2 % in 2009 in the first half of the year because of the slowdown in the economy affected from the global financial crisis. Findings from surveys by SME Corporation Malaysia (SME Corp. Malaysia) on 3,264 SMEs in April/May 2010 showed that 23 % of the respondents have recovered in 2009 and the remaining respondents are expecting a full recovery in the second half of 2010.

The services sector would be the main driver of growth during 10MP period, expanding at an annual rate of 7.2%, exceeding the overall GDP growth of 6 percent per annual. Most of the identified growth areas under the NKEAs are in the services sector, therefore SMEs need to explore the potential and realign with the strategies to ensure the increasing of contribution to the economic growth.

Literature Review

Recently, countries in the world are moving from an industrial economy to the knowledge and digital economy whereby the economic growth is dependent on a country's ability to create, accumulate and disseminate knowledge as reported by Asia-Pacific Development Information Program, 2010 in Thailand. The wave of ICT as technology that be able for transmitting and processing information considered as part of the information society that able to create and disseminate new information. The report also highlighted that ICT has sped up the pace of globalization and increase the complexity of business processes because firms have to involve in global environment instead of local context. Thus, to compete in the knowledge economy, firms need a strong ICT-literate skills base that can innovate and adapt quickly to meet the changing. Business organization especially SMEs in Malaysia should to be the adaptive enterprise which can respond properly and in timely manner to changes in the business environment. Many market,

technology, and societal pressures surround the modern organization, which is responding with critical response activities supported by ICT. The role of SMEs in the overall economy is important because its contribution to creating more jobs and development of the social-economy for the local community (Barba-Sanchez, 2007). The SMEs development not only create changes in developed countries like the United Kingdom, United States of America and other European countries, it brings changes to developing countries such as China (Tan, et. al., 2007). ICT is perceived to play a crucial role in transforming not only big but also SMEs (Kushwaha, 2011). Since last decade, information technology has received significance research attention (Ndubisi & Kahraman, 2005). From mid-1980s onwards, information technology started to make strategic impact (Bassellier et al., 2003). The rate of expansion of globalization has encouraged among other things the effective flow of data in organizations, which can only be facilitated by the use of ICT (Kushwaha, 2011). Many people will relate ICT with the computers, but it is more than the computer. ICT is about the technologies that provide access to information through computers.

ICT is important to SMEs because it will help develop the efficiency of the organization (Wen, King & Jaska, 2008). Several studies finding shows that use of ICT increase sales (Ashrafi and Murtaza, 2008, Davidavičiene, 2008). Study found that ICT can reduce business costs (Christiaanse and Kumar, 2000) and improve productivity (Oulton, 2002, Gelauff et al., 2004). Adoption of ICT is not only strengthen growth possibilities but also creating network with all other business in the world, can have cooperation, and can improve quality and knowledge (Barba-Sanchez et al., 2007). The use of ICT can improve business competitiveness with internet providing numerous opportunities for SMEs to compete equally with large corporations (Alberto & Fernando, 2007). The study conducted by (Sharma & Bhagwat, 2006) argued that the flow of information in an organization is the blood life of any business operating unit irrespective of its size. It is commonly accepted that ICT provides many potential benefits to organizations so as to make them more efficient, effective and competitive (Fink and Disterer, 2006). SMEs would greatly benefit by ICT adoption in their business processes (Maguire et. al., 2007). Some empirical studies by Brynjolfsson and Yang (1996), Bartelsman and Doms (2000), Dedrick et al. (2003), Kohli and Devaraj (2003) and Melville et al. (2004) confirmed the positive effects of ICT on firm performance in terms of productivity, profitability, market

value and market share. Their study also revealed that ICT has some effect in terms of intermediate performance measures such as process efficiency, service quality, cost saving, process flexibility and customer satisfaction. A quantitative study regarding the co-relationship between ICT usage and SMEs business objectives and the result was positive (Schubert & Leimstoll, 2007). There are some findings about how ICT made a difference in business performance, for instance, firms using e-mail for customer communication grew 3.4% faster in terms of sales than those that did not use e-mail (Qiang, Clarke, & Halewood, 2006). Evidence shows that durable productivity gains have been achieved in enterprises which have adopted ICT (Dangayach & Deshmukh, 2003; Sheils et. al., 2003). In another study in Canada, deployment of e-business methods improved sales by 4% and growth in exports by 5% (Raymond, Bergeron, & Blili, 2005). ICT modifies productive factors where it applies and will significantly increase the productivity of human capital (Becchetti & Adriani, 2005). According to Economist (2005b), strategic use of ICT will actually contribute to nationwide economic growth. Rasiah (2006) confirmed statistically the positive, strong and synergistic impact of ICT on GDP per capita, that there is a need for economies to spend more on ICT.

Previous research showed that the slow adoption in ICT among SMEs in Malaysia. As reported by Kotelnikov (2007) in Asia-Pacific Development Information Program, SMEs in most developing countries in the Asia-Pacific region still have been slow to adopt ICT. Studied by Hashim (2007) showed that SME owners in Malaysia possess below-average ICT skills, they seldom use ICT, find ICT adoption difficult, and are late in the adoption process. Supported by Alam & Ahsan (2007), in their preliminary findings on ICT adoption in Malaysian SMEs from service sectors revealed that the investment of ICT in Malaysia's SMEs is relatively low. This research found that about 57.22% have owned a computer, 47.8% had internet access to their business, only 9.44% developed their business website and 74.4% used email for the business purposes. Most SMEs perceived the barriers of implementing ICT into their business operations as expensive, risky, complex procedure, lack of technical expertise, and customer services (Yeung et. al., 2003; Chong et. al., 2001; Pires and Aisbett, 2001). Tan (2006) argues that ICT in Malaysia is facing big challenges because of the slow adoption of technology by SMEs. He suggests that SMEs must learn to adopt technology to increase their global competitiveness. There is a lack of access to better technology, and ICT hinders efficient and productive

business operations among Malaysian SMEs (Saleh & Ndubisi, 2006). Findings from Tan and Eze (2008) indicated that SMEs are likely to adopt ICT in future, government initiatives through Ninth Malaysia Plan (2006-2010) seems to be not very successful because the internet-based ICT adoption is still low. Tan and Eze (2008) also revealed that email usage and information seeking by internet become two most important factors on ICT while business transaction through like e-commerce and e-business was still not popular among SMEs in Malaysia. Although the benefit that ICT can bring to SMEs was highlighted in the Asia-Pacific Development Information Program, SMEs in most developing countries like Malaysia still have been slow to adopt it although most SMEs in Malaysia realize that ICT is critical to the productivity and performance of their companies (Lim, 2006).

Research Methodology

The survey is the preferred type of a data collection procedure for this research because of the several advantages such as it is the economy of the design and ability to identify attributes of the population. The questionnaire is developed to collect the primary data from the respondents. The survey is cross-sectional where the information is collected at one point in time.

The population for this research is the Malaysia SMEs in services sector. Based on the Census on Establishment and Enterprises 2005 conducted by Department of Statistics Malaysia (DOSM), the population for services sector is 474,706 about 87% from the total of SMEs in Malaysia. The size of categories divided into micro (80%), small (18%) and medium (2%). Referring to the Sample Size for a Given Population by Sekaran (2007), the sample size of 384 is enough for population up to 1 million. Therefore, the collection of 390 respondents for this study is appropriate for a total of 474,706 SMEs in services sector throughout Malaysia. The sample size for each nation in Malaysia is based on the percentage of the SMEs in particular nation divided by the population of services sector SMEs. The sampling design is probability proportionate stratified random sampling where elements in the population have a known chance of being chosen as subjects in the sample. Population was divided into nations and thereafter the subjects are drawn in proportion to their original numbers in the population. This is because the representativeness is important in this study where the need for choosing the right sample is critical and also the interests of generalization of the findings.

The list of large SMEs in services sector in Malaysia was retrieved from Malaysia Yellow Pages at http://www.yellowpages.com.my/, IKSMalaysia.com at http://www.iksmalaysia.com.my/ and SME Business Directory at http://www.smeinfo.com.my/. The target respondent of the survey was the owner or the management level who usually involved in decision making. The pilot test was conducted in Melaka which involved 25 SMEs in services sector. Cooper and Schindler (2003) stated that the size of pilot test may range from 25 to 100 respondents, and the respondents do not have to be statistically selected. The questionnaires are sent by hand and collected within one week. From the pilot test, the respondents give some feedback that it is not suitable to ask directly their annually sales turnover because of the confidentiality and no need to ask for the company name. This is the reason for not answering the survey questionnaire by most of the companies. From this feedback, some modifications to the questions are made.

For the purpose of data collection throughout Malaysia, various methods are used included distribution of questionnaires during trade exhibitions, telephone survey, by hand and also by email from early May 2012 to end of July 2012. Total of 592 questionnaires distributed which the breakdown about 40 % during trade exhibitions at Shah Alam and Melaka, 40% by telephone survey, 15 % sent personal emails and the balance 5 % distributed by hand to the respondents around Melaka town. Finally, about 390 usable responses that made 67% of effective response rate. The high response rate is contributed through the trade exhibitions and telephone survey. The 390 completed surveys accounted for 244 micro enterprises, 121 small enterprises and 25 medium enterprises. Respondents are from various main business activities in services sector throughout Malaysia. The survey formed a normal distribution population as the micro enterprises are the majority followed by small and medium enterprises. For the purpose of data analysis, SPSS 19.0 is used. To summarize and describe the observation of the data, descriptive statistics are performed.

Result and Data Analysis

Some basic business characteristics of respondents are shown in Table 2. Most of the respondents are under micro category where the number of full-time employees less than 5 (63.8%), followed by the employer that have between five to nineteen employees (27.2%), between twenty and fifty (7.4%) and more than fifty employees (1.5%). The business activities covered at the national level which constitute local (48.5%), within

Malaysia (41.8%) and international (9.7%). Most of the SMEs have no branches (86.7%) because the large population of the micro category although 45.1% of the respondents have established their business more than 10 years. About 2.1% of the respondents are new in the business for less than 1 year.

Table 2 Basic information of respondents

		Number	**%**
Category	Micro	244	62.6
	Small	121	31.0
	Medium	25	6.4
Company status	Bumiputera	242	62.1
	Non-bumiputera	148	37.9
Type of firm	Sole Proprietorship	192	49.2
	Partnership	20	5.1
	Private Limited	177	45.4
	Public Limited	1	0.3

The primary data are calculated for generalization to get the numbers and percentage for whole population of Malaysian SMEs from services sector as stated in Table 3.

Table 3 Calculation for generalization of findings

Findings	**Micro**	**Small**	**Medium**	**Total**
No. of SMEs	244	121	25	390
Calculation for code B1: Business using computer	219/244=89.8%	120/121=99.2%	25/25=100%	364/390=93.3%
Calculation for code B3: The business using the internet	197/244=80.7%	118/121=97.5%	25/25=100%	340/390=87.2%
For generalization:				
No. of actual population	381,585	83,037	10,084	474,706
Calculation for code B1: Business using computer	89.8%x381,585 =342,663	99.2%x83,037 =82,373	100%x10,084 =10,084	93.3%x474,706 =442,901
Calculation for code B3: The business using the internet	80.7%x381,585 =307,939	97.5%x83,037 =80,961	100%x10,084 =10,084	87.2%x474,706 =413,944

Table 3 shows the sample calculation for the code B1 and B3 only. The same applied for other codes. The results contributed to the profiling of 12 elements (Code B1 to B12) core ICT indicators for all the categories as shown in Table 4 (end of this paper). The profile of the data is about the present of ICT adoption in terms of numbers and percentage specifically based on the elements that any business should have in order to sustain and compete globally.

Referring to Code B1, at present most of the SMEs in services sector have owned the computer (93.3%). All of the SMEs from small and medium categories have owned and used the computer in their business while another 6.7% did not owned and used the computer in their business are from the micro category. As an overall, for Code B2, about 91.6% of the SMEs that have used the computer in their business employed employees to routinely use the computer at their workplace. Referring to the Code B3 and B4, the businesses using the internet and the persons routinely employed using the internet are increasing to 87% as compared to previous finding by Alam and Ahsan (2007) at 57%. Most of the small and medium categories SMEs are using the internet while 20% of the micro category is not using the internet for their business. This empirical study also found that as an overall the business with web presence (Code B5) is at 43%. About 90% from the total medium category has the web presence for their business, 50% for small and 40% from the micro category.

Code B6 refers to the connection of business with an intranet. The businesses with an intranet refer to an internal communications network using internet protocols and allowing communication within an organization and to other authorized persons. Only 6.4% SMEs from all categories have an intranet for their business. As for B7, the businesses receiving orders over the internet refers to the incidence of selling over the internet. Orders received include orders received via the internet whether or not payment was is online. These include orders received via websites, specialized internet marketplaces, extranet, transaction over the internet, internet-enabled mobile phones and e-mail. About 52.6% of the SMEs in services sector receiving orders over the internet with 80% from the medium, 68% from the small and 49% are micro category. For code B8, the businesses placing orders over the internet refers to the transaction of purchasing over the internet. Orders placed include orders placed via the internet whether or not payment is made online. They include orders placed via websites, specialized internet

marketplaces, extranet, transaction over the internet, internet-enabled mobile phones and e-mail. Only 21.6% of the SMEs in services sector placing orders over the internet with 44% from medium, 42% from the small and 17% are micro categories.

Regarding to the businesses using the internet by type of access (code B9) refers to the internet access services used such as narrowband, fixed broadband and mobile broadband. Narrowband includes analogue modem (dial-up via standard phone line), Integrated Services Digital Network (ISDN) , Digital Subscriber Line (DSL) at speeds below 256 kbit/s, mobile phone and other forms of access with an advertised download speed of less than 256 kbit/s. Fixed broadband refers to technologies at speeds of at least 256 kbit/s in one or both directions such as DSL, cable modem, high speed leased lines, fiber-to-the-home, power line, satellite, fixed wireless and Wireless Local Area Network. Mobile broadband refers to technologies at speeds at least 256 kbit/s in one or both directions that access via any devices such as handheld computer, laptop or mobile phone. The findings revealed that most of the SMEs from services sector connected via fixed broadband such as Streamyx (58.4%), mobile broadband (24.6%) and narrowband (1.9%).

For code B10, it is refer to a network connecting computers within a localized area such as a single building, department or site and it may be wireless. Only 6.8% of the SMEs in services sector connecting to Local Area Network (LAN) which suitable for business that have a wide area such as many departments or wide place. Code B11 is about the businesses with an extranet. Extranet is a closed network that uses internet protocols to securely share a business's information with suppliers, vendors, customers or other businesses partners. It can take the form of a secure extension of an intranet that allows external users to access some parts of the business's intranet. Only a few SMEs in medium category (4.6%) have the business with an extranet.

Code B12 is about the businesses using the internet by type of activity. There are consist of others twelve sub-elements. Sending and receiving an email are among the popular activities among SMEs whereby about 84.3% of them performed this type of application with above 80% on average for every category. But on more advance activity such as the used of telephoning over internet like Skype is not famous where only 4.7% for all category. Searching and getting information about products or services contributed about 66% and almost the same for all categories

of the SMEs. While getting and interacting with government is about 50% on average. For internet banking, only 43% of SMEs performed this transaction and 3.7% for other financial services. Providing customer services includes providing online or e-mailed product catalogues or price lists, product specification or configuration online, after sales support, and order tracking online. On average, about 70.7% performed these types of application in their business. For delivery products online, 22.5% of SMEs in services sector have established these activity since this only involved the products in digitized form such as reports, software, music, videos, computer games, and online services, such as computer-related services, information services, travel bookings or financial services. About 5% of SMEs in services sector performed the internal or external recruitment including having details of vacant positions on an intranet or website. For staff training includes e-learning applications available on an intranet or from the World Wide Web (WWW), only 3% of them used this application for their business.

Discussion

The findings for this study was based on primary data through survey questionnaires throughout Malaysia from 390 SMEs in services sector as the respondent that can be classified by the all categories of SMEs included micro, small and medium. The findings of this research have been generalized for the actual population of Malaysia SMEs in services sector since the respondents were normally distributed. The micro category represented the large portion of respondents followed by small and medium category as a normal distribution same as actual population of services sector SMEs in Malaysia. The Bumiputera of the SMEs are more than non-Bumiputera because most of the SMEs are micro category from Bumiputera status. The sole-proprietor ownership and private limited are most type of their company. Reflected from the majority of the SMEs in the micro category, the number of full time employee is less than five peoples which contribute the annual sales turnover less than RM200,000.00. About half of the respondents established their business transaction within Malaysia and most of them not yet have another branch for the business although most of respondents have operated their business more than 10 years. This is to accept that many of the previous research have indicated the low utilization of ICT among SMEs in Malaysia. The factors contributed to this situation because they feel comfortable with the conventional method of promotion such as 'word of mouth' retail trading and they

only serve for the local customers at surrounding their business area. To them, the usage of ICT is not considered as a necessity in micro category business like them. Usually the old businesses that established for more than 10 years are expanded by creating more branches and performed retail trading for surrounding customers.

More than 60% of SMEs in services sector in Malaysia have utilized the all types of basic communication included fixed line, mobile phone and fax. The use of mobile phone only as a basic communication mostly by the micro category of SMEs because the mobile phone is the basic and become the important tool for everybody although they are not doing any business. The findings show that above 90% of the SMEs in services sector in Malaysia used the computer in their business operation. Most of them assigned between one to five employees to use the computer as a routine job. There are a small portion of SMEs are not using the computer at all in their business operation mostly in Terengganu and Sarawak.

About 87% of the SMEs in services sector in Malaysia have the internet connection via the fixed broadband followed by mobile broadband while 90% of them are not connected with other network like intranet, local area network (LAN) and extranet. Only a few small and medium categories of SMEs have these types of network. They also assigned between one to five employees to use the internet as the routine job in the business operation. Less than 13% are still not connected to the internet for their business mostly in Sabah, Sarawak and Terengganu. Most of the businesses have established more than 10 years to serve 'walk in' and local customers in retail transaction and they are not willing to pay for the monthly fee of the internet.

Less than 50% of the SMEs in services sector in Malaysia are communicate their business with the web presence while another have not yet. In this study, the communication through social media such as blog and Facebook are took into consideration since these methods are widely used especially by micro category because it is free and easy to create and use. Additionally, it is user-friendly and effective way to establish rapport and build a networking. The retail business activity mostly have the web presence to communicate their business followed by the advertising and ICT firm and wholesale business.

From the internet usage, about 57% of SMEs in services sector in Malaysia performed the sales via internet for the suitable products or services that can be send digitally such as music, journal, report, picture, electronic book, art and alike. This percentage also contributed by the orders received via internet for other types of products and services that are not send digitally. But for the purchasing or placing the orders, the figure is not encouraging, only 26% of the SMEs in services sector in Malaysia performed these activities. The low purchasing and placing the orders by SMEs are the effect from less confidence about the security issues of internet banking for payment from both parties. The sales and order received are high because of the retail trading from the customers usually in small volume or number.

Around 70% to 87% of the internet activities performed by SMEs in services sector in Malaysia are focusing on basic applications such as interaction with others by sending and receiving emails, posting information and getting information about products and services for their business. About 50% is another application like interaction with government organizations to get any information and downloaded related forms. The internet banking activity also not encouraging which usage are not more than 50%. While another advanced application such recruitment, training, financial services and telephoning over internet are not popular among them. Only 12% of SMEs in services sector in Malaysia mainly in small and medium categories used the specific software in their business process such as payroll, accounting and inventory management system.

Limitations of Study

This study was conducted for SMEs in the services sector only. Therefore, the generalization of the results is applicable for this specific sector. Additionally, this research used the definition of Malaysian SMEs. Thus, the applicability of findings to other countries may be limited.

Suggestions of Future Research

This study reveals the profile of ICT innovativeness for SMEs in services sector only. Future study may help investigate for SMEs in other sectors to support the development of overall SMEs in Malaysia more comprehensively.

Conclusions and Implications

This study contributes the significant findings at present status on ICT innovativeness that was applicable in developing an action plans and programs for the development of SMEs. Additionally, the information and communication technology (ICT) is one of the National Key Economic Areas (NKEAs) that should be emphasize to support the development of SMEs in Malaysia to increase the economic growth. SMEs must benchmark themselves against the international level, equipped with the necessary skills and technical expertise and adhere to global standard.

Besides of several incentives and initiatives emphasized by the government as stated in the SME MasterPlan (2011-2020), Tenth Malaysia Plan (10MP), Third Industrial Master Plan (IMP3) and to become high income nation as described in new economic model (NEM), this study supported the government agenda by several suggestions that should be look into it. The information gathered from the profile has to be used extensively for SMEs development programs. The coaching programs for the purpose to facilitate SMEs more intensively in regard of the more advanced ICT applications used in their business is one of the recommendation that need to be discuss further.

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